business topics

VOL. 2 NOVEMBER, 1954 NO. 3

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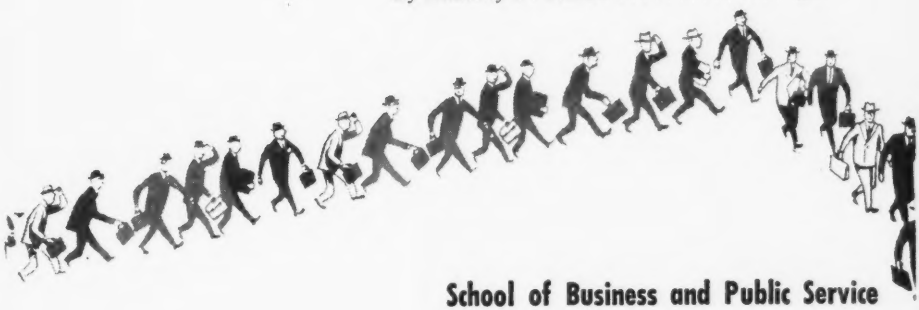

School of Business and Public Service
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Education for Restaurant Management

The Department of Restaurant Management was established as part of the School of Business and Public Service in 1951, to help serve the fourth largest retail field's growing needs. The restaurant industry has grown rapidly, and its size can be gauged by the fact that twenty-five percent of the foods consumed in the United States, by value, passes through food service industry channels. Today the industry employs one out of every six persons in a retail occupation. Its potential as an employer of young people and importance as a market for agricultural products makes this a field of especial interest at Michigan State College.

The curriculum in Restaurant Management stresses business management with students studying economics, accounting, management, finance, marketing and business law. In addition they study food products, their purchasing and preparation, service and sanitation. Successful restauranteurs today must understand rather complicated machinery; and engineering, layout and design are part of the program. Courses of the Department of Restaurant Management include restaurant accounting, food and labor cost control methods, restaurant operation and practice, food merchandising, packaged foods, restaurant law and a sequence in management and supervision. To complete the training in this area, students supplement their academic courses with a minimum of twenty weeks of on-the-job experience in commercial operations. The Kellogg Center also gives the students practical experience and pay for work in its Food Department, on the Campus.

The Department of Restaurant Management processed hundreds of job opportunities for graduates and undergraduates this past year. Seventy million meals are eaten away from home daily, and growth continues, which indicates a bright future in the restaurant business.

business topics

Vol. 2 November, 1954 No. 3

"Let your discourse with men of business be short and comprehensive."

(George Washington's *Copybook*).

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A LETTER FROM BRAZIL . . . . .

This first item is imported from Brazil, where it now is springtime and where a group of our professors are making a substantial contribution to hemisphere solidarity.

November 1, 1954

GREETINGS FROM BRAZIL—a fascinating country and a land of many striking contrasts. With a single glance one may see a modern electric bus passing a burro-drawn cart, a smartly dressed young businesswoman meeting a woman carrying a fifty-pound basket of vegetables on her head, the ultra-modern skyscraper towering above thatch-roofed huts.

Sao Paulo, Brazil's largest city and South America's leading industrial center, is celebrating with appropriate extravagance her humble founding by the Jesuits 400 years ago. A forgotten Indian settlement in what the Portuguese discoverers dismissed as an economic desert has become a city of progress, with shining white skyscrapers and flowering parks. Its industrial districts each year reach out and engulf a little more of the surrounding countryside. In 1940 there were some 4,500 factories in and around Sao Paulo. Today there are about 25,000 producing goods which Brazil once bought from European countries, Japan, and the United States.

There is still much that Sao Paulo cannot produce, however, such as certain types of machinery and higher-grade engineering goods like automobile motors and transmissions. Sao Paulo's problem is not so much the lack of technicians and skilled labor, or even of capital; she needs many more broadly-trained, responsibility-conscious management men to organize and control her sprawling industries and distribution organizations. She is also being held back by material shortages. Power supplies are becoming increasingly inadequate—in fact, strict rationing of electric current for both domestic and industrial use is commonplace, and dwindling hydroelectric reservoirs are indicators of even more serious trouble ahead. Basic production is being steadily outstripped, and with Brazil's currency difficulties a manufacturer may have not only to pigeon-hole his plans, but to cut down production or stop entirely because of the lack of often a very small proportion of essential raw materials or technical parts.

While Brazil has almost unlimited resources, it is saddled with crippling governmental red-tape and a weak monetary and financial system. The utter lack of decent communication facilities and adequate transportation facilities make the functioning of the distribution system of the country a haphazard one at best. Yet, in spite of these and many other drawbacks, many phases of the economy seem to be moving along at a rapid pace. For example, Brazil is one of the world's leaders in the use of air transportation. Sao Paulo's airport has more activity than London's. Every three minutes there is a plane either landing on its runways or taking off. The air route between Sao Paulo and Rio de Janeiro ranks second in the world in passenger traffic. It is surpassed only by the traffic between New York City

and Washington, D. C. All major cities and towns in the interior of this vast country are connected by air routes; indeed, the airplane is the only reasonable means of reaching some of them.

Most of the growth of Sao Paulo has come in recent decades. Eighty years ago it was a small rural town of 25,000 inhabitants. By 1920 it had grown to over half a million; today it is approaching the three million mark, increasing at the rate of almost 150,000 a year. This dynamic city of Brazil constructs a new building every forty-five minutes, not excluding nights or Sundays. Land in the central part of the city is as valuable as in the very heart of Manhattan.

While the city is the cosmopolitan center of Brazil and attracts people and money from all over the world, Sao Paulo's true wealth lies far away from the skyscrapers and the streams of traffic and hurrying people. It is to be found in the city's hinterland—in the interior, amid the cotton and coffee fields, cattle *fazendas,* the sugar cane plantations, orange and eucalyptus groves, vineyards and tea gardens that stretch as far as one's eyes can see. It is on these, fundamentally, that Brazil's prosperity depends.

It was in this setting that Michigan State College was asked by the United States Foreign Operations Administration to aid the Brazilians in the establishment of the first school of business administration on the university level in South America. Dr. Karl A. Boedecker and I, with major responsibilities in the fields of administration and marketing, respectively, arrived in Brazil in April of this year. We participated in early planning with officials of the Getulio Vargas Foundation, the

Brazil's Young-Old Giant: The Brand-New Skyline of Sao Paulo.

non-political, non-profit organization which serves as Brazilian sponsor of the project. The first two months were spent in orienting ourselves to Brazilian business conditions by visiting offices and plants of many firms and becoming acquainted with business leaders. At the same time, we took daily lessons in Portuguese, and conducted regular daily seminar training sessions for eight young Brazilian assistant professors who had been chosen by the Foundation after a competitive selection process. We also directed these assistants in the preparation of translations and Brazilian case materials.

In July, Dr. Leonard H. Rall and Professor Fritz B. Harris arrived from MSC to complete the team of American professors. Their arrival was followed by further planning sessions in Rio de Janeiro and continued training sessions for the assistant professors in preparation for the first program. Excellent office and classroom space and a competent clerical staff have been provided by the Foundation. These and general administrative activities of the school are directed by a Brazilian Coordinator who also acts as a liaison between the American professors and the officials of the Foundation in Rio. On August 3 a Consulting Commission consisting of forty-five outstanding Brazilian and American business leaders of the area was inaugurated at a ceremony held at the Palace of the Governor of the State of Sao Paulo. Dr. Garcez, The Governor, presided at this meeting, and serves as Honorary President of the Commission.

We are now in the fourth week of our first course, which began on September 13. This course is an intensive twelve-week program for business administrators. It was our feeling that the new school could show effective results most quickly by serving first those already entrusted with management responsibilities. The main objectives of this course are to develop an awareness of the broad scope of management problems and to train executives to make decisions and to take responsible action. The material is concentrated in the four principal areas of administration, finance and accounting, marketing, and production. These are supplemented by two sessions per week in the area of business legislation, given by Brazilian lawyers, and one session per week in current social and economic problems of Brazil, presented by various Brazilian leaders in the respective fields.

After a thorough screening of 138 applicants for our present course, forty-one are attending classes, which are divided into two sections. They are an unusually fine group of administrators, about half of them owners or sons of owners of large and medium-sized businesses. The remainder are managers or heads of departments within businesses or factories. Their average age is about 35. Their attitude has been very good and their attendance nearly perfect. One man drives from Santos every day—a distance of fifty miles. The classes are one and one-half hours each, with each section having three sessions per week with each of the four American professors. All take the same course, which represents a full-time academic load for each student. Each person agreed not to work at his regular job during the twelve-week period.

Major emphasis is given to the problem or case method of instruction, which is a completely new teaching technique in Brazil. The students seem

to like the method, and group participation is excellent. Since none of us speaks Portuguese fluently, the method tends to minimize the language barrier. Our assistant professors, who are bilingual, make whatever translations are necessary in the course of discussion. Each of these assistants will eventually spend about eighteen months in graduate study at Michigan State College and return to assume broader responsibilities at the school.

Plans call for expansion of the program of the school as quickly as is feasible. We are tentatively planning to inaugurate a graduate program during 1955 and a four-year undergraduate program early in 1956. In addition, the present intensive course will be repeated as often as is necessary to meet the needs of the community. Full-time programs will be supplemented by special top-management seminars and conferences on various specialized subjects.

The enthusiasm and cooperation which the business leaders of this area have shown and their almost unanimous opinion, " . . . this is what Brazil has needed for a long time!" serve as an inspiration and a challenge to each of us who has a part in the project—Brazilian and American alike.

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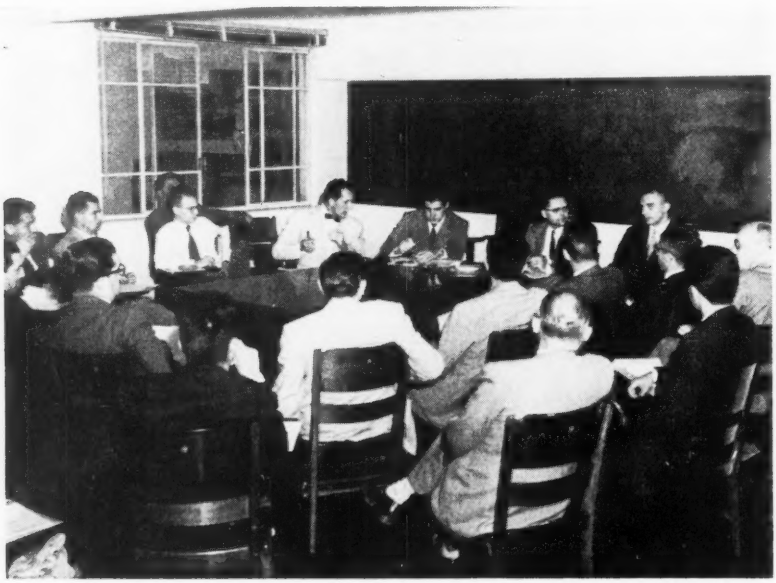


Inter-American Class Meeting: 2nd from left, Leonard Rall; 4th from left, Ole Johnson, both of Michigan State College. Others are Brazilian members of the faculty of the School of Business Administration in Sao Paulo, and students.

THE PHARMACEUTICAL INDUSTRY: YESTERDAY, TODAY AND TOMORROW

*By ANNE C. GARRISON**

Look into anyone's medicine cabinet, practically anywhere, and you will find made-in-Michigan medicines. This article will acquaint you better with this industry.

In considering the pharmaceutical industry, which looms large on the Michigan scene and in its development is moving almost with the speed of light, it is important to define and restrict the field under discussion. This article deals only with the "ethical" drug business: that part which is backed by all the resources of contemporary research, deals directly with the doctor in introducing and promoting its products, and guards its reputation by the avoidance of lurid advertising and high-flown appeals to the public. Firms with research departments ponderous with well-known scientists and abstruse projects have little connection with Indian Snake Oil and blatantly alcoholic tonics for middle-aged women with flagging morale.

No Sky Writing—The ethical manufacturer advertises, to be sure, but he keeps his publicity on a high plane, stressing the name and integrity of his firm rather than the miraculous properties of any of his products, and if he succeeds in developing a miracle drug he does not hire a sky-writer to inform the public of it, but works with great circumspection through the medical profession. Since the pharmaceutical houses thus operate, as it were, at one remove from the population at large, we are less likely to be aware of them than of other enterprises of equal size. In this article stress is laid on their important place in the economic life of our state. Part of this picture, also, is occupied by the brokers who handle the raw materials used by these firms, and by manufacturers who supply many chemicals essential to the making of medicines.

New Days, New Drugs — Perhaps there is no state in the union where profound changes in the social and economic picture are taking place at a more rapid rate than here. The jet and atomic age are bringing into play fantastic new demands on a heavily industralized region, and are extending industry's sphere of influence over a wider and wider hinterland. New uses for rare minerals, new sources for old ones, new transportation possibilities opened up by the Straits bridge and the Seaway: all these factors put our state into a condition of unprecedented developmental flux. It is an interesting fact that the pharmaceutical industry, discreetly carried on in handsome landscaped plants and screened from the public view by competent public relations, is in the very forefront of revolutionary change. The industry's spokesmen like to make the striking statement that *90% of the prescriptions a doctor writes today could not have been written fifteen years ago, for the ingredients didn't exist.* There can

*Mrs. Garrison is Associate Editor of Business Topics.

hardly be another industry with such a rate of obsolescence.

Egg-Shells and Whiskey—It was not always so. Horse-and-buggy medical practice employed horse-and-buggy methods of compounding drugs. The doctor's little black bag and laboratory bench, within living memory, contained many a home-made remedy and the mortar and pestle and portable scales used in compounding them. Reliance was upon morphine and its derivatives and upon botanical drugs whose efficacy varied more than did their nauseous characteristics. Many a reader will supplement this memory with one of home cures: sulphur and molasses in the spring, paregoric for a fretful baby, a cup of bergamot or sassafras tea to comfort a chest cold. More remote days of pioneering in Michigan leave an account of remedies as heroic as they must have been ineffective: for example, crushed eggshells in whiskey to be taken *ad satietatem* for "the shakes".

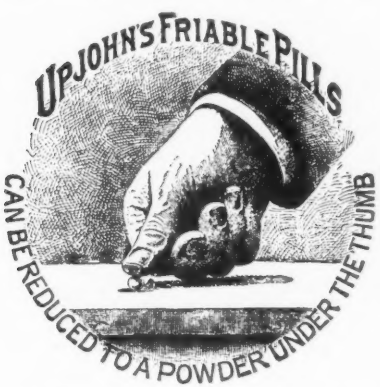
Parenthesis: $25 for a Weed — It took no large-scale drug industry to handle the needs of people who could survive such cures in addition to the disease itself. In fact, the first widespread commercial pharmaceutical undertaking in this state makes no more than a curious footnote to our story. Early settlers knew that the sight of an aromatic woodland plant with inconspicuous yellow-green flowers could mean $25 to them in hard cash: a big sum, when a cleared and producing farm might bring in less than $200 a year. Many people devoted a good deal of time to hunting this plant, ginseng, or *panax quiquefolium,* and up to twenty years ago it was still grown commercially. For what use? The Chinese made a medicine of it, and had exhausted their own supply. (No one has discovered any actual medicinal value in ginseng, but the Chinese wanted it.)

The Origin of the Modern Pharmaceutical Industry

To return to our horse-and-buggy physician, we recall that he did much of his own compounding. If he had a knack for this activity and turned out a cough syrup that really soothed or a pill that was less adamantine than the ones he could buy, he was likely to undertake the manufacture of these items, perhaps as a sideline to his practice, perhaps as a full-time pursuit. As far as I have been able to determine, Parke, Davis and Company is the oldest manufacturer of pharmaceuticals in Michigan, and its start came in this very way, through a Detroit drugstore owned by Dr. Samuel P. Duffield in the early 1860s. Hervey C. Parke joined him in 1866, and a year later, George S. Davis. In 1875 the business, now incorporated as Parke, Davis and Company, was in operation, with five owners and a capital of $82,000. Today it is owned by over 24,000 stockholders, while its actual monetary value can scarcely be estimated, so far-flung are its operations. It has long been engaged in rivalry for the first place in the industry with the Eli Lilly Company of Indianapolis.

"Friable Pills"—The same pattern of development is seen in the Upjohn Company of Kalamazoo. Leafing through magazines of the '80s and '90s one is likely to come upon a trademark that strikes a familiar note, for it was used, in simplified form, up until

twenty years ago. This is a realistic steel engraving of a hand (correctly edged by white cuff and coat sleeve) the thumb of which is engaged in crushing a pill. Slogan: *Upjohn's Friable Pills Can be Reduced to a Powder Under the Thumb.* Dr. Upjohn, practicing in Hastings, had patented a process for making more soluble pills than had hitherto been available. An



Old Familiar Trademark. Upjohn used this, in one form or another, for fifty years.

early technique practiced by his salesmen was to produce from the sample case a section of pine plank, a bottle of some Upjohn pills, a bottle of a competitor's pills, and a small hammer. Talking rapidly of the staleness and impermeability of the average bolus, the salesman would *drive the rival pill into the board* with the hammer. He would then triumphantly crush the Upjohn pill upon the board with a gentle pressure of his thumb. Such a spiel proved very successful, for in 1887 Dr. Upjohn and his three brothers were able to incorporate in Kalamazoo as the Upjohn Pill and Granule Company, with a list comprising one hundred and eighty-six pill formulae. The most popular were preparations of quinine and of iron. This firm, though not the first in the state, was a pioneer of manufacturing, coating and bottling processes: the machinery, designed by the inventive Upjohn brothers, is still in use today in improved form.

Other Firms—An industrial index of the state yield the unexpected information that some forty pharmaceutical companies are located here. These figures are to be taken with a degree of skepticism, for not all these firms fall within our strict definition of the industry. Moreover, some of the smaller ethical manufacturers concentrate on a single product, while others specialize in a fairly limited range of items, such as sterile solutions. Still others have a flexible program of job-lot manufacture and custom work for private physicians. (These smaller firms, under the conditions of today's competitive operations, are at a distinct disadvantage, for large-scale research is vital, and of necessity the little fellows cannot set their sights so high.) One firm has recently been founded for the commercialization of chemical processes for the separation of bile acids; another concentrates on the nutritional requirements of milk bacteria. Of the smaller houses in the state, only the Sherman Laboratories in Detroit manufactures a comprehensive line of pharmaceutical and biological products. Founded in 1907, it originated in the research activities of a private physician. The L. Perrigo company of Allegan, dating from 1887, has a line of fine organic chemicals and pharmaceutical compounds, while the Atlas Pharmaceutical Laboratory in Detroit caters directly to private physicians in its manufacture of injectable material.

Milk Products—In a special category are the firms which manufacture nutritional aids. Among those which prepare milk products for pharmaceutical distribution are the Wyeth branch in Mason (SMA, an infant formula, has been manufactured there since 1923, and the plant became part of the Wyeth Company in 1939). The product has world-wide distribution, and the manufacturing operation is supplemented by a research unit for the study of nutritional problems. Mead Johnson, of Evansville, Indiana, has a similar plant for Dextri-Maltose in Zeeland, while the M. and R. Dietetics Company manufactures Similac in Sturgis.

Location — As for that interesting question of why an industry is situated where it is, the answer seems to be that the drug industry located where it was handy for the founder: in the town where he had his medical practice or drug store, or in a convenient near-by city. Raw materials have always been brought from far afield. In the old (pre-antibiotic) days, when greater use was made of botanicals, a great proportion of these had to be bought through brokers who imported them from all over the world: cassia and senna from Indonesia, willow and poplar bark and licorice root from Europe, chaulmoogra oil from Persia, chinchona bark from South America. There was no question, then, of locating near the source of raw materials. Today, also, the materials come to the industry. In the case of animal products, the packing plants supply many different items. Basic chemical manufacturers supply other materials. The important place of the Dow Chemical Company as a supplier will be dealt with later.

The Extent of the Industry

There is no region of the world today, no hole-in-the-wall adobe drugstore in South America or caravanserai in Damascus where you will not be likely to find Parke, Davis and Upjohn labels on the bottles, or infant

W. R. Jeeves, Vice President of Parke, Davis, donates a shipment of Chloromycetin for the relief of Peruvian earthquake victims.

formula supplements packed in Mason, Sturgis, or Zeeland. The author's youngest child, born in a remote mountain city in Mexico, was fed on Michigan milk.

Parke, Davis in particular has made its mark in the foreign field. Its first manufacturing facilities outside the country were set up in Walkerville, Ontario in 1887. Today the firm manufactures in Toronto, Winnipeg and Mexico City also, and its other manufacturing branches, outside the continent, are (take a deep breath) London and Hounslow in England; Sydney, Australia; Buenos Aires; Havana; Rio de Janeiro; Bombay; Caracas, Venezuela; and Brussels. Manu-

facturing alone, that is, for distribution has its branches in practically all countries outside the Iron Curtain.

Upjohn's emphasis on foreign business has not been so great. All its manufacturing is done in Kalamazoo (mostly at the mammoth new Portage plant), while it maintains fifteen large distributing and sales offices in the United States and two foreign affiliates in Canada and England. At the present time extensive remodelling of home office facilities has been undertaken to provide for the international division, and it is expected that the export business will receive greater and greater emphasis. A stroll through the shipping warehouse leaves one with a sober realization of international responsibilities of American industry. Here, piled to the ceiling, are cartons labeled in Portuguese, Arabic, French, Spanish — Michigan-made weapons of medicine's peaceful warfare.

At the other end of the operation, research teams go wherever the search for new drug sources may lead. Parke, Davis was among the first to send botanical expeditions abroad. In 1869 —a long time ago, in this industry—its scientists were searching the swamps and jungles of Mexico, Central and South America and the West Indies for new material of possible scientific use. Only recently our other large firm, Upjohn, collaborated with Penick, the great botanical supply house, in a six-month, 11,000-mile expedition to Central Africa, in search of the elusive *Strophanthus,* as part of an elaborate research investigation into cortisone synthesis—a trip that may pay off someday in easing that knee of yours that gets so painful in damp weather.

Research

Mention of scientific expeditions suggests what can be considered the most vital activity of today's pharmaceutical houses: research. A wall chart of the industry's progress would show a fairly orderly course, more or less parallel to the country's general economic development, up until about fifteen years ago. Since then the rate has been nothing short of phenomenal, as the medical profession, the government and the industry itself take cognizance of the tremendous force the pharmaceutical houses exert through their research undertakings. The introduction of the sulfonamides into the chemotherapy of infectious disease is the real beginning of this period, where the line of development of our chart climbs in an angle almost as steep as a rocket's take-off. From the drug companies' point of view, the new factor in the picture is the realization that *nowadays you can't even stay in business*—let alone get ahead of competition—*without a full-scale effort of the research department.* Not only do you have to run faster and faster to stay in your place in the industry, but you must at the same time cut away the footing under your own feet by rendering your products obsolete before your competitor does it for you. The only winner in this race is the ultimate consumer.

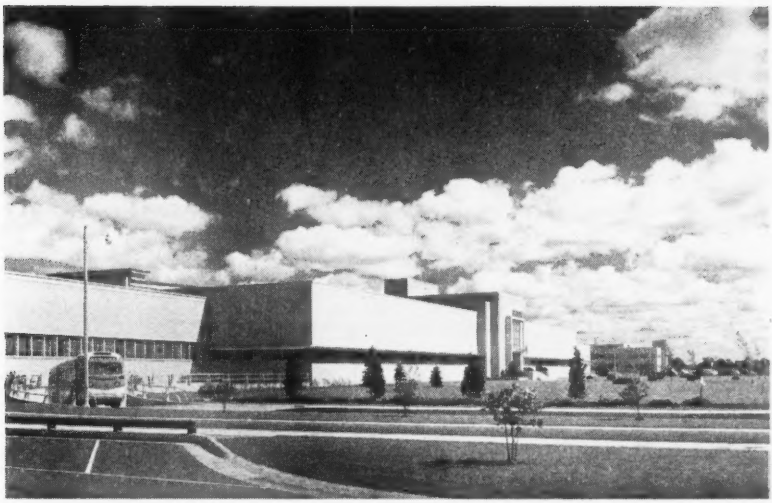
What the Price Includes. Both the retail druggist and the customer (and *sub rosa* the doctor himself) are likely to complain of the high cost of drugs. A cut-rate compounding house can, for example, put out a vitamin product which it sells by mail at about 40 percent less than an almost identical product of one of the large ethical firms.

The factor that is overlooked in making such a comparison is the fantastically expensive one of research. The large firms work in the public interest as much as that of their owners and stockholders, by supporting research on the scale they do. Approximately 5 percent of the total income of the ethical pharmaceutical industry is earmarked for this purpose. As an example of the scope of this branch of a large house, the research department of Upjohn Company employs 400 persons and covers 200,000 square feet of space, with the most modern equipment. (In 1913 one man was employed in this work, and 160 square feet were covered.) The research department itself is divided into *eleven* full-scale departments, the size of which can be estimated from the company's description of a typical one, the Physics Department:

> In the Physics Department, we have many examples of instrument development and application which is necessary in modern pharmaceutical research. These range from better tools for analytical procedures to the application of electronics in equipment required by chemists and biologists to increase accuracy and capacity of many critical measurements. Here we have also the use of infrared and utraviolet spectroscopy to aid the chemist in identification of compounds. For this purpose, x-ray photographs of crystal structure, solubility analyses, and electrometric titration are also applied. Research on effects of high energy radiation . . . are carried out to evaluate possible applications to pharmaceutical research and production. The application of radiology and use of isotopes in many basic studies is controlled by the Physics Department.
>
> Ultra high speed centrifugation at 50,000 revolutions per minute, electron microscopy, and electrophoretic measurements of evaluation of protein purities are other examples of critical functions in the Physics Department, which in its entirety provides the modern critical instrumentation required for research.

Research studies may take years to come to fruition, and may be completely successful, only to be superseded within months. An example, gloomy or encouraging depending on the way you look at it, is what happened with the pneumonia serums, which kept the research and manufacturing departments of several large houses humping back in the '30s. Millions and millions of dollars went into the development and production of facilities for producing the necessary 32 varieties of the serum. These facilities for this production had scarcely been completed when the discovery of sulfanilamide suddenly eliminated their usefulness. In a little more than a year, the pneumococcus-type identification centers, the rabbit hutches, the serum processing equipment, were gone. Nothing was left but the prestige of having beaten the disease to its knees before the knock-down blow was administered by the new drugs. Then in due course sulfanilamide was surpassed by improved sulfa drugs and a long array of antibiotics.

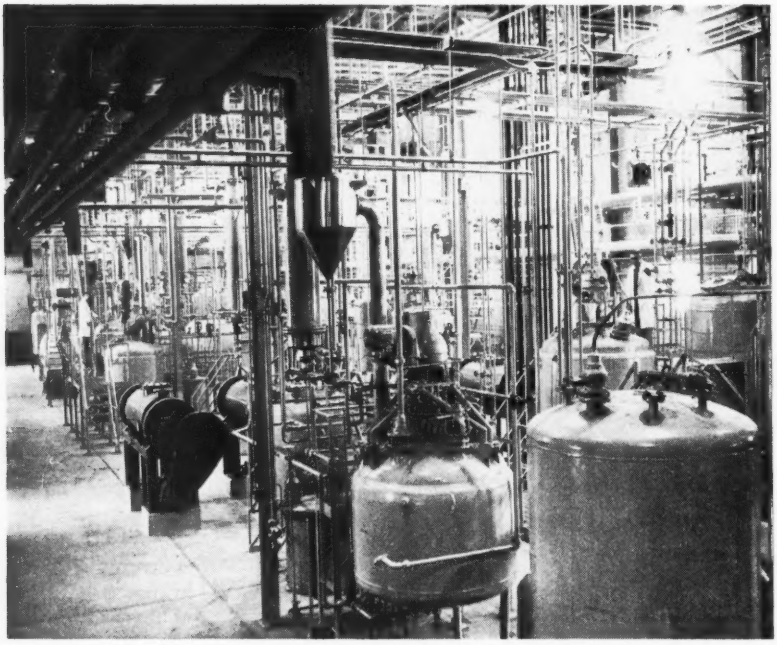
Mum's the Word—It is understandable that firms with large sums tied up in research like to keep the nature of it pretty quiet. If Firm A learns that Firm B has hired the famous Dr. X to work in research in Field Y, it is likely to turn its own scientists loose on a similar project, trying to be first on the market with the new wonder-drug Z. With the present rate of growth and competition, the first product into the drug stores is the one that pays off. Consequently information about specific research is hard to get. However, firms are often associated with research within a certain area.



The Beauty of Modern Industrial Design: Upjohn's famous Portage plant.

Areas of Research Concentration—Parke, Davis has the industry's most comprehensive research program on anti-epileptic drugs, has made important improvements in penicillin products, and has long carried out intensive study of viruses. It is actively participating in the polio vaccine program of the National Foundation for Infantile Paralysis. Upjohn has been a leader in the field in the effort to synthesize animal products such as hormones from adrenal cortex. It has also concentrated on the development of antibiotics and nutritional aids. One of its most dramatic discoveries of recent years has been Gelfoam, an attractive glistening white brick, like a dry cellulose sponge in appearance; when applied to bleeding areas, internal or external, this gelatine product forms a moist dressing that stops bleeding within a few minutes and can be left in place to be absorbed by the body. Needless to say, the mention of these few products of our two leading pharmaceutical houses is intended merely to suggest the scope of their interests. It may be recalled that Upjohn alone, and it the smaller of the two, carries on research in eleven full-scale departments.

Physical Plants—The accompanying photographs give some idea of the type of layout that the making of today's medicines requires. Some of the handsomest industrial buildings in this country house the present industry, and notable among these is the stunning array of modern yellow brick structures at Portage, just south of Kalamazoo, where Upjohn's manufacturing, warehousing, and much of its research are situated. A 1500-acre rural site, much of it landscaped and laid out with recreational facilities, contains an extremely attractive main building with more than 44 acres of floor space. Architecturally, this is a model of contemporary industrial design, and world



Labyrinth of science: Interior of the Parke, Davis Holland plant.

famous in this respect alone. Much of the building is air conditioned, some areas closely controlled for humidity and sterility of the air. The flexible arrangement of partitions and the immediate availability below the floor of steam, water, and gas pipes and electric wiring, so that any 4-foot unit of floor space can command all these, are carefully planned features that increase the useful adaptability of the building. A full-scale industrial health department, cafeteria, three snack bars, a barber shop, lounges with shuffle-board and ping pong, music and delightful furnishings, the very color of the walls, all contribute to keeping the workers happy and efficient. It is no wonder that the company is noted for its fine employee relations, among the best in the industry. Advantages the workers enjoy include liberal paid vacations and sick leave and a most advantageous insurance program.

Parke, Davis finds its own huge plant resources in Detroit taxed by the amount of activity now going on there, despite recent additions to its facilities. Among these are two new laboratory building, one for virology, the other for products development. Both these projects focus upon a broadening program of research. The firm's 22 acres along the Detroit River are covered with 58 buildings in all, while in nearby Rochester it maintains a 700-acre farm for the development of biological products and virus vaccine products. On a

30-acre site near Holland the company operates a manufacturing laboratory. It will be recalled, of course, that this firm's manufacturing is also carried out elsewhere in this country and throughout the world.

Research and the Colleges

The pharmaceutical industry operates in a mixed atmosphere of rivalry and collaboration. The various firms are in active competition, but there is cooperation between the industry and government, and between the industry and the teaching and clinical facilities of the medical profession. A new drug, after exhaustive testing by a company, may be released for clinical or institutional laboratory use under controlled conditions, for further testing. Colleges and clinics enjoy special research grants from the various pharmaceutical industries. Research projects originating with various scientists or students in educational institutions may be carried on in cooperation with a firm, or by means of grants from it. Research grants of one sort or another have been made by the pharmaceutical industry to the various medical, dental, pharmacy and veterinary schools of the state.* Such grants or fellowships are not given only by the large firms, for funds have been provided for these purposes by companies of very modest proportions, as well.

A Firm in a Special Category

The gap in our story must have been obvious: there is missing the great name of Dow. The Dow Chemical Company of Midland is in such a special category that it seems reasonable to consider it separately. It is both a manufacturer of end products, a purveyor of raw and intermediate materials to the industry, and a sponsor of far-reaching research, either initiated by itself or originating as a project of other institutions. Take, for example, its manufacture of numerous chemicals now being tested as possible curative agents of cancer. In addition to these agents, the company produces solvents that aid in the extraction of tissues for cancer research, and other chemicals that release substances for study. As for such studies themselves, the firm has for many years contributed funds for vital projects at one of the country's leading cancer research centers. To consider another branch of medical study, Dow chemicals contribute to the production of all commercial antibiotics (such as penicillin and aureomycin) either as intermediate chemicals or as aids to purification. Other basic materials one may not associate with Dow, but which it supplies in bulk to the pharmaceutical houses for final processing, include such things as aspirin and a whole host of other analgesics (pain-killers) and sedatives. The basic of Dow's manufacturing program, in this as in other fields, is its brine supply.

Dow Helps Food Keep You Alive— A highly dramatic branch of this company's research concerns the amino acids, the twenty-three "building blocks" of which the body constructs its various proteins. Without these we cannot live: in fact, if one of the eight *essential* amino acids is missing from the diet, its lack renders useless three or four others that may be present. The successful synthesis of all eight of these, for use in "spiking" low-quality

*For example, there are at present four projects in the Surgery & Medicine Department of the School of Veterinary Medicine at Michigan State, which are being carried out in association with Upjohn.

protein diets for animals or men, is Dow's recent great contribution to the solving of the world's fearful nutritional problems. In the first commercial plant for amino acid production, Dow pioneered in this field in 1950. It would lie outside the scope of this article to deal with other activities of this firm, some of which were dealt with in a previous *Business Topics* article, "Basic Chemicals in Michigan", (September, 1953).

Conclusion

If one could stress only a single phase of the pharmaceutical industry in the state, it would be the rapidity of its rate of development and change at present. As atomic energy enters the picture, with its vast implications for the medical sciences, we may even look for the rate of development to accelerate. No doubt some aspects of present research and manufacture are as doomed as was the pneumonia serum project by the emergence of the sulpha drugs; but in an industry so sensitive to change and so optimistically bent on outmoding its own discoveries, we need not fear that any avenues of development will remain unexplored—and Michigan's pharmaceutical houses will continue to be among the leaders.

BOAT TRIP, ANYONE?

A correspondent has nice things to say about "Old-time Resorting in Michigan" in our September issue (adv.), but points out that we might well have mentioned the Walk-in-the-Water, the steamboat that plowed through Lake Ontario before most Easterners had even heard of steam. He refers us to the *Niagara Journal* of Buffalo, New York, in which the following item appeared on May 24, 1819:

> The Steam-boat Walk-in-the-Water, will leave Black Rock for the Island of Michillimackinac, on the 11th day of June next. The Walk-in-the-Water is near 400 tons burthen—has a powerful engine—is schooner rigged, and in every respect a safe and commodious vessel. She will perform the voyage to Mackinac (a distance of near 800 miles) and back in 2 weeks; remain two days at Mackinac, and a proportionate time at Detroit and the other principal settlements on the American shore, at which she will touch both going and returning. Persons desirous of visiting this delightful part of our country, may secure a berth and excellent accommodations, by addressing a line to Capt. Fish, on board the boat, or to J. B. Stuart, Buffalo.

Significant Changes in the Internal Revenue Code of 1954 as They Affect the Individual Taxpayer. Part 1 - Income

*By CECIL RINALDO UPHAM**

The Internal Revenue Code of 1954 represents the first complete overhaul of our Federal tax laws during the twentieth century. All taxpayers are affected. Tax rates have not been altered but the rules for determining taxable income have been extensively revised. The purpose of the revision as stated by the House Ways and Means Committee has been "to remove inequities, to end harassment of the taxpayer and to reduce tax barriers to future expansion of production and employment". Most of the changes apply to the calendar year 1954.

Some of the more important changes made by the new code affecting the individual are summarized below. A subsequent article will deal with changes affecting business expenses and deductions for corporations and individuals.

Income

Dividends—The new law has made two important changes with respect to dividends received. First, there is a flat exclusion from gross income of the first $50 of dividend income received from a domestic corporation during a taxable year ending after July 31, 1954. If husband and wife file a joint return, and one has dividend income and the other has none, the 1954 exclusion is $50. If each has dividend income of $50 or more, the exclusion for 1954 is $100.

In addition to the flat exclusion of dividend income, there is allowed a new credit for dividends received. This credit is against the tax liability and is equal to 4% of the amount of dividends received from domestic corporations which are included in gross income. The 4% allowance applies to dividends received after July 31, 1954, but is limited to 2% of taxable income for taxable years ending before January 1,

Example: J. C. Carlson's 1954 income consisted of $2,450 in dividends received after July 31, 1954 from domestic corporations (after excluding $50 received in November) and $3,700 of other income. His wife had no income; he elected to take the standard deduction, and they had two exemptions. This tax liability on a joint return is calculated as follows:

Adjusted gross income		$6,150.00
Standard deduction	$ 615.	
Two exemptions	1,200.	1,815.00
Taxable income		$4,335.00
Tax (joint return)		$ 874.06
Dividends rec'd credit		86.70
Net tax liability		$ 787.36

*Mr. Upham is Associate Professor of Accounting, Michigan State College.

1955, and 4% of taxable income for taxable years ending after 1954. Under a further limitation, it may not exceed the amount of income tax liability.

The dividends received credit and exclusion are allowed only for dividends received from domestic corporations. Dividends (commonly referred to as interest) paid by mutual savings banks, cooperative banks and domestic building and loan associations that are withdrawable upon demand are not eligible. True patronage dividends paid by either exempt or taxable cooperatives are also denied the exclusion and credit.

Accident and Health Benefit—The new law provides a uniform rule for the exclusion from gross income of amounts received by an employee under an employer-financed accident and health insurance plan. Generally speaking, amounts received by an employee through accident or health insurance for personal injuries or sickness are taxable to the extent that they (1) result from contributions by the employer that were not taxable to the employee, or (2) are paid by the employer. However, there are three instances when such benefits are not taxable. (1) Benefits received directly or indirectly by the taxpayer to reimburse him for expenses he incurred for medical care for himself, his spouse and his dependents are not taxable unless the taxpayer has taken a medical deduction for the expenses. (2) Gross income does not include an amount received that constitutes payment for permanent loss of a member or function of the body, or the permanent disfigurement, of the taxpayer, his spouse or a dependent. (3) Benefits up to $100 a week compensation for the loss of wages during absence from work due to personal injuries or sickness may be excluded. But such benefits for the first 7 calendar days are taxable unless the employee is hospitalized for at least 1 day during that 7 days or his absence is due to an injury.

Example: The "X" Company has an accident and health benefit plan for its employees under which each employee absent from work for a total of not to exceed two weeks during the year on account of sickness or personal injury continues to receive an amount equal to regular wage for such absences.

Martin, one of its employees, became ill on September 10, 1954 and remained at home until September 24, 1954 when he reported for work. For his 2 weeks' absence he received his regular weekly wage of $130. Since Martin was absent at home due to sickness (not an injury) during the entire 2 weeks, the 1st week's payment is entirely taxable, but only $30 of the 2nd week's payment is taxable.

If Martin was hospitalized for at least one day in the first week, or if he was absent because of an injury even though not hospitalized, he would be entitled to the $100 exclusion for the first week and only $30 of that week's payment would be taxable.

Retirement Income — In order to equalize the treatment of social security benefits and railroad retirement act benefits (both tax-exempt), and other forms of retirement income that are subject to tax, the present law gives a limited exemption, by means of a credit against the tax, for all kinds of retirement income, including pensions, annuities, interest, rents and dividends. The effect of the provision is to allow an exclusion of $1,200 of retirement income at the bottom tax bracket (20%). The maximum tax saving would be $240.

The credit is available to all individuals over 65, and to individuals under 65 retired under a public retirement system, such as firemen, policemen, teachers and federal employees.

The credit is available only with respect to retirement income up to $1,200 included in gross income. Therefore, such income as wholly tax-exempt interest, social security and railroad retirement act benefits and any other pension or annuity which is excluded from gross income reduces the $1,200 of annual retirement income on which the credit is based. Likewise, any payment which represents compensation for personal services rendered by the retired taxpayer cannot be included in retirement income, and personal service payments in excess of $900 reduces the amount of the retirement income.

Example: In 1954 Don Taylor, single and 67 years old, received the following items of income:

Dividends	$ 250
Interest on savings account	180
Social Security benefits	900
Compensation for odd jobs	1,000
Pension from former employer	1,200
Total	$3,530

Retirement income and credit is computed as follows:

Dividends ($50 excluded)	$ 200	
Interest	180	
Pension	1,200	
	$1,580	
Maximum retirement income allowed		$1,200
Reduced by:		
Social Security benefits	$900	
Wages in excess of $900	100	1,000
Retirement income base		$ 200
Credit (20% of $200)		$ 40

The net tax liability of Mr. Taylor would be computed as follows:

Gross Income:		
Dividends ($50 excluded)		$ 200
Interest		180
Pension		1,200
Odd Jobs		1,000
Total		$2,580
Less: Itemized deductions (1)	$ 175	
Exemptions	1,200	1,375
Taxable Income		$1,205
Tentative Tax (20% of $1,205)		$ 241
Less: Credit for Dividends rec'd (4% of 200)	$ 8.00	
Retirement income credit (20% of 200)	40.00	48
Net tax liability		$ 193

(1) If taxpayer elects the "short form" return, he loses the retirement income credit.

Annuities—"An annuity is a series of periodic payments, such as annual, semi-annual, quarterly or monthly payments, which continue from a given time for the remaining life of an individual known as the annuitant or for a fixed number of years. There may be a minimum number of periods, or a minimum total amount payable, without destroying the character of the payments as an annuity."[1]

From the amount received each year as an annuity there may be deducted the portion allocable to that year of the cost of the annuity divided by the life expectancy of the annuitant or the number of payments to be made. This exclusion is to remain the same even though the annuitant outlives his life expectancy.

Example (1): Al Warner purchased an annuity which cost him $10,900. His life expectancy at the starting date of the contract was 10 years. Annual payments were $1,200. 1/10 of $10,900 or $1,090 is a return of his investment each year. The remaining $110 must be included in gross income.

[1] I.R.C. Sec. 72 (a).

Example (2): If the annuity was purchased April 1, 1954, with quarterly instalment payments to begin July 1, 1954, the amount received in 1954 would be $600 (½ of $1,200) and the amount excluded from gross income would amount to $545 (½ of $1,090).

Prior to 1954 each year's annuity payment includible in gross income amounted to 3% of the cost of the annuity. The remainder was excluded until the original investment was recovered tax-free, thereafter, the entire amount received was includible income.

Example (3): Using the cost data given in Example (1) above, the includible income under prior law was $327 (3% of $10,900) and the excludible portion, $873. ($1,200-$327). In the 13th year the includible portion amounted to $776 tax-free portion $424. In the 14th and later years, the entire $1,200 was includible.

For pre-1954 annuity contracts, the life expectancy as of January 1, 1954 is applied to the cost reduced by pre-1954 payment which were recovered tax-free. If the annuity is payable for a fixed number of years, the new method is applied using that period instead of life expectancy.

Example (4): R. F. Kahler purchased on January 1, 1949, a life annuity for $50,000, payable in annual installments of $5,000 beginning January 1, 1950. For the years 1950-1953 inclusive (4 years) Kahler recovered $14,000 tax-free under the 3% prior-law rule. Kahler's life expectancy as of January 1, 1954, the annuity starting date is 12 years. The amount of each exclusion beginning with 1954 is $3,000 determined as follows:

Annual payment	$5,000
Cost of contract	$50,000
Less: Amount recovered under 3% rule	14,000
Investment on contract as of 1/1/54, the annuity starting date	$36,000

$$\text{Annual exclusion } \frac{\$36{,}000}{12} = \$3{,}000.$$

Kahler will include in gross income in 1954 and each subsequent year $2,000 ($5,000-$3,000) regardless of the number of years he actually lives.

Where both employer and employee contribute to the cost of the annuity contract, a special rule applies if annuity payments in the first 3 years will equal or exceed the employee's contribution. All annuity payments he receives are excluded from gross income until he recovers all he contributed. After that, the full payment received is includible in gross income.

Example (5): A. B. Dick's pension is $2,000 a year. He contributed a total of $3,000. The payment received in the first year is fully exempt; $1,000 of the second year's payment is income; all of the third and future year's payments are income.

If an annuity, endowment or life insurance contract is surrendered (other than by reason of death of the insured) and a lump-sum payment is received, the excess of the amount received over the unrecovered cost is taxable income. This was the rule under prior law and remains the same in the 1954 law but the tax under 1954 law cannot exceed what it would have been had the lump-sum payment been received ratably in the taxable year and the 2 preceding years.

Life Insurance Death Proceeds—Life insurance proceeds paid by reason of the insured's death are not taxable income. If the proceeds are left with the insurance company at interest, the interest becomes includible income. In these respects, the rules are unchanged from prior law.

Under prior law, if the proceeds were payable in fixed instalments, the full amount of each instalment was tax-exempt, even though the instalment contained an interest element. In general, the new law taxes the after-death interest element. But if the beneficiary is the surviving spouse of the insured, the interest element up to $1,000 a year is *not* taxable income.

A surviving spouse gets only one exclusion regardless of the number of policies.

Example (1): H. Green left Alice, his widow, $100,000 (face amount of life insurance payable in 10 equal annual installments of $11,500.) The annual exempt portion is $10,000 (1/10 of $100,000): the annual includible portion $500.

Example (2): Assume the same facts as in (5) above except that Green left Alice two such policies. The annual taxable amount would be $2,000 ($500 + $1,500).

Scholarships and Fellowships— Amounts received as scholarships at educational institutions are excluded from gross income under certain circumstances.

If the student is a candidate for a degree and the grant requires him to perform teaching, research or other services, the amount received that represents salary for those services is taxable. But if such services are required of all candidates for a particular degree (whether or not they are recipients of scholarship awards), such amount is excluded.

If the student is not a candidate for a degree, there is no exclusion unless the grantor of the scholarship is a tax-exempt organization, the United States or its instrumentalities, a State, Territory, U. S. possession, District of Columbia, or a political subdivision thereof. The exclusion is limited however, to $300 per month and is fully taxable after 36 months (whether or not consecutive).

Example (1): In March 1954 Jenkins was awarded a post-doctorate fellowship at Michigan State College, to commence September 1, 1954 and end on June 1, 1955. The grant is for $4,860. Jenkins received monthly instalments of $540 on the first of each month. During 1954 he received a total of $2,160 (4 months). His exclusion will amount to $1,200 (300 × 4) and the amount includible on gross income will be $960 (240 × 4).

Alimony — Periodic payments, regardless of whether they are made at regular intervals, received by a wife are includible in her gross income if received: (1) under a decree of divorce or of separate maintenance or under a written instrument incident to such decree; (2) under a written separation agreement executed after August 16, 1954, if husband and wife are living apart and do not file a joint return; or (3) after August 16, 1954, under a decree executed after March 1, 1954, requiring the husband to make the payments for the wife's support or maintenance, provided they are separated and do not file a joint return.

Deductions

Medical Expenses — Medical expenses in excess of 3% of adjusted gross may be deducted under the 1954 law. Under prior law the deduction was 5% of adjusted gross. This change represents a liberalization of the law. The 3% limitation does not apply to the expenses of taxpayer and his wife if either is 65 years of age or over. The new top limits on the deductible amounts are $2,500 per exemption (not counting those for blindness and old-age) with a maximum of $5,000 on a single return, and $10,000 on a joint return and for head of household.

The cost of drugs and medicines is included in medical expenses only to the extent it exceeds 1% of adjusted gross.

Example (1): J. T. Burke, under 65, has an adjusted gross income of $7,500. He paid $450 for doctor bills and $130 for drugs. Total medical expense deduction is calculated as follows:

Doctor bills		$450	
Drugs	$130		
1% of $7,500	75	55	
Total		$505	
Adjusted gross income			$7,500
Total medical expenses allowable		$505	
3% of adjusted gross of $7,500		225	
Excess deductible			$ 280

If the taxpayer was 65 years of age or older, the 3% limit would not apply, but the 1% rule would. In this case, the taxpayer's deduction would be $505.

Charitable Contributions — Under the 1954 law a ceiling equal to 30% of adjusted gross income is provided for contributions to religious organizations, regular schools and hospitals, provided such contributions are at least 10% of adjusted gross. Gifts to other qualified charitable contributions cannot exceed 20% of adjusted gross.

Example (1): J. C. Dee had an adjusted gross income of $10,000 in 1954. He made a contribution of $2,000 to his church and $800 to the Boy Scouts. Since the church contribution exceeds 10% of $10,000, the limitation is 30%. Maximum contribution deduction is $3,000 (30% of $10,000), even though actual contribution amounted to $3,200.

Example (2): Assume the same facts in (1) above, except that Mr. Dee contributed $3,200 to his church. The maximum deduction in this case is $3,000 (30% of $10,000).

If contributions to religious organizations, regular schools and hospitals is less than 10% of adjusted gross, the entire contribution is deductible in full.

Example (3): Assume the same facts as in (1) above except that Mr. Dee contributed $800 to his church and $2,400 to the Boy Scouts. The $800 contributed to the church is fully deductible and $2,000 of the $2,400 contributed to the Boy Scouts would be deductible (20% of $10,000).

Example (4): Assume the same facts as in (1) above except that the contribution to the Boy Scouts was $3,200. The limit of deduction in this case is $2,000 (20% of $10,000).

Child Care Expenses—A new provision in the 1954 law permits a maximum deduction of $600 to any working woman or working widower for expenses paid for the care of a dependent who is either a child under 12 years of age or who is physically or mentally incapable of caring for himself. This special deduction is allowed in addition to the $600 dependency deduction.

There are further limitations on the deductions allowable to a working wife; (1) The deduction is allowed only if she and her husband file a joint return and (2) the reduction is reduced by the amount that their adjusted gross income exceeds $4,500. If the adjusted gross on a joint return amounts to $4,900, the maximum deduction for child care would be $200. ($600 minus ($4,900 minus $4,500)).

The above limitations do not apply if the husband of the working wife is incapable of self-support because he is mentally or physically defective.

Returns and Exemptions

Heads of Household — Under prior law, the head of a household received a tax benefit equal to about one-half

of that permitted by a married couple enjoying the split-income provision of the law. This relief is continued in the 1954 law. A dependent parent, under the 1954 law, will qualify a taxpayer as head-of-household even though the parent does not live with the taxpayer, provided taxpayer furnishes more than one-half of the cost of maintaining the parent's home. All other dependency classifications, such as son, daughter, etc., must live with the taxpayer.

Income Splitting Extension—Income splitting is normally allowed only to married people. The 1954 law provides that if one spouse dies within the taxable year, the widow or widower may enjoy the same benefits of full income splitting for the first two taxable years after the taxable year in which his or her spouse dies providing he or she has in the household a son or daughter (including step children) who qualify as dependents. The surviving spouse is not required to include in his income the income of the dependent child, and will lose the benefit of income-splitting by remarrying within the time period specified above.

Dependency Exemption—This exemption has been liberalized under the 1954 law. A non-relative can now qualify as a dependent, if he is a member of the taxpayer's household and the taxpayer's home is his principal place of abode. A person not a member of the taxpayer's household can qualify only if he is related to the taxpayer in a manner specified in the law (the specified relationships are the same as under prior law).

Under prior law the maximum income permitted a dependent was $600. Under the 1954 law, the test is abolished altogether under two conditions: (1) If the dependent is a child, stepchild or adopted child of taxpayer and under 19 years of age, (2) If the dependent is a child, stepchild or adopted child of taxpayer who, for 5 months or more during the calendar year is a full-time student at a regular school or college, or is pursuing full-time on-farm training under the supervision of an educational institution or state agency.

Example (1): J. T. Olsen is attending Michigan State College. The total cost of his support in 1954 is $2,400. He earned $1,100 during the year which he applies towards his support. The father contributes $1,300 and would be entitled to the exemption since he contributes more than one-half of the support.

A scholarship received by a student attending a regular school or college will not count in computing the parent's support.

Example (2): R. C. Ashman is a student at the University of Pittsburgh. The total cost of his support in 1954 is $2,400. He received a $600 scholarship for school expenses and he earned $800 during the summer which he applies to his support. The father contributes $1,000, and would be entitled to the exemption since he contributes over one-half $1,800 ($2,400-$600).

Where several people contribute more than one-half of the support of a qualified dependent and no one in the group contributes more than one-half, they can draw up a written agreement among themselves providing for one member of the group to take the exemption deduction. The person taking the exemption must show that he contributed more than 10% of the support, and he must file with his tax return a copy of the written agreement entered into with the other people furnishing part of the support.

Returns of Individuals—The deadline for filing final income tax returns and making final payment of taxes is extended to April 15 for calendar-year taxpayers. A similar one-month extension is provided for individuals using a fiscal year. The effective date for fiscal year taxpayers is for years beginning after 1953 and ending after enactment of the new law in 1954.

The same one-month extension is provided for declarations of estimated tax and making the first payment of estimated tax; but the subsequent dates of June 15, September 15, and January 15 for paying installments and making amendments to the original declaration, are not changed.

For tax years beginning after 1954, declarations of estimated tax are required only of: (1) single persons who anticipate that they will earn more than $5,000 gross income of which $100 or less is not subject to withholding at source; (2) Married couples and heads of households who expect to earn more than $10,000 gross income of which $100 or less is not subject to withholding at source; or (3) anyone who expects to receive gross income of more than $100 not subject to withholding and if he expects non-withholding gross income will be more than $400 plus $600 for each exemption.

TAX HELP WHEN YOU NEED IT

Time's awasting, and that extra month of grace on income tax returns isn't going to seem like much leeway in a little while. The Chamber of Commerce of the United States (Washington 6, D.C.) comes to the rescue with a brief and pithy pamphlet, *How The New Tax Code Affects You.* Single copies may be had free on request.

Correction!

In our June Issue the item "A Great Midwest Economist" is attributed to Leonard S. Rall, whereas it was actually written by Larry S. Ritter. In addition, Dr. Rall's initial is actually H.

Do You Know These Michigan Towns?

Again we tease you with clues about certain towns in our state. If any reader guesses them all correctly and will let us know, as Honor Roll of Knowledgeable Readers will be published.

1. In 1836 the first train west of Schenectady, New York, puffed into this maple-shaded town. The wire fencing that has been produced here, over the years, would, as they say, reach. Light industrial metals are an important product here today. Three institutes of higher education flourish here, as do chrysanthemums, peonies and Indian mounds. In lending his name to the town, a Roman emperor lost a letter.

2. Who says women can't run trading posts? The first enterprise here is proof to the contrary. A Chippewa word meaning "The Marshy Place" is the appropriate name of this city, which was once known as the lumber capital of the world. In 1887 local mills cut a record 700,000,000 board feet, and soon after provided much of the boards to rebuild Chicago after the great fire. Among the city's world titles today are: largest producer of piston rings, largest producer of billiard tables and bowling alleys. Many other industries keep the wheels going round. It is hard to see how anyone here can put in a day's work, for the city is surrounded with more vacation attractions than almost any place.

3. Modesty forbids that we describe this community in too glowing terms. Perhaps it is enough to say that here is located one of the most daring innovations in the history of the world: the first college in any country to be dedicated to the proposition that education is for anyone enterprising enough to go and get it, and that the farmer has just as much stake in the world's culture as has the lawyer or teacher. This revolutionary thesis has been written, not in words, but in acres of farms, laboratories, and classrooms, and it all belongs to all of us.

4. There are people all over the nation who know this city as the place where their homes were constructed. Many of us in Michigan are driving our cars with gasoline refined here from Michigan oil wells' petroleum. Many also think of this city, very literally, as the location of their alma mater.

(For the answers, see page 30.)

IT'S ALL HORSECOLLAR

Offhand, we are likely to think of the important inventions and discoveries as being of Einsteinian complication and subtlety. Moreover, we assume that our own age, from the Industrial Revolution, has had a monopoly on inventiveness. And one of the firmest tenets of the modern mind is that nothing important happened between the fall of Rome and the rise of capitalism. The following interesting passage from *The Mind of the Middle Ages,* by Frederick B. Artz (Knopf, 1953) should dispel these notions. Before reading it, see if you can answer this question: What single simple invention in the course of historical times tripled or quadrupled the amount of available horsepower? (You'll be surprised.)

"The phenomenal technological change that is one of the most characteristic features of modern civilization had its real beginnings in the Middle Ages. . . . From the eighth century on, new machines, devices and techniques multiplied. Without entering the debated field of the origin or the earliest date of these discoveries, we find western Europeans making things the Romans had either not known at all or had barely known, such as felt, trousers, soap, butter, barrels and tubs of wood, wheelbarrows, fiddle bows, spinning-wheels, and the wheeled plow which made plowing easier and more effective and made it possible to work wet bottom lands. . . . By the thirteenth century many other new things had come into use—spectacles, the functional button, which revolutionized clothing, paper, the mechanical clock, from which later came many other precision instruments, the compass and gunpowder, the last two being now believed to be European rather than Chinese inventions, the crank, unknown to the Greeks and Romans, first used on machines to grind grain, then on rotary grindstones, and finally applied to all forms of machinery. The crank proved to be an invention second only in importance to the wheel. . . . One of the great technical achievements of the later Middle Ages was the production of cast iron. . . .

"Some modern scholars have found the improved use of the horse the most representative of medieval technical changes. The Romans used only yokes for harness, and so the load could not be heavy or the horse would choke. The Romans had no method of harnessing more than one horse at once, and, as they usually did not shoe their horses, they frequently rendered them useless through broken hoofs. Some time before 1000 men learned to shoe horses with nailed-on shoes and invented the horse-collar, tandem harness, and the stirrup. With a collar a horse could pull three or four times what the ancient could get out of him with a yoke; and, with tandem harness, a number of horses could pull on a single load. With shoes the danger of breaking the horses' hoofs was greatly reduced, and with the stirrup, riding and controlling the horse were both made easier. Formerly all heavy loads had to be moved by manpower; now they could be moved by horsepower."

THE MANUFACTURERS' AGENT: A BENEFACTOR OF SMALL INDUSTRY

*By GEORGE D. McCORMICK**

This type of marketing agency is too little known beyond those directly engaged in industrial marketing.

The term "manufacturers' agent" means many things to many people. The agent, whose functions are not universally understood, performs an essential role in the marketing picture. He is directly responsible for a sizeable amount of the sales volume of industry throughout the United States and Canada.

The Manufacturers' Agent of Today

In order to better understand the part a manufacturers' agent plays in the marketing picture, it is well to know what a manufacturers' agent is. A good definition may be found in the Department of Commerce guidebook *Selling the United States Market,* (1951 edition). Chapter 4 has the title: "Distribution Channels and Facilities" and in it these two paragraphs appear—

"The manufacturers' agent is an independent representative maintaining his own headquarters and bearing his own operating expenses, generally without any contribution on the part of his principals. His only income derives from the commissions earned on sales which may vary from 1 or 2 percent on fast moving, bulk merchandise to as much as 15 or 20 percent on some highly technical engineering lines.

"Manufacturers' agents — in some trades called brokers — are active in many fields of selling such as machinery, paper products, hardware, food, chemicals, paints, clothing, bottles, novelties and house furnishings. They do, in fact, sell practically every type of consumer and industrial products. Agents will be found operating in all the marketing centers of the United States."

His Place in the Sun—The Bureau of the Census issued a monograph in 1952 with the title: *The Manufacturers' Agent as a Marketing Institution.* In this monograph it was stated that when the 1948 business census figures were compiled there were found to be 9,048 manufacturers' agents functioning in the United States. These 9,048 men produced sales of approximately $4.21 billion. Sales-wise they accounted for 3.7% of the total wholesale trade dollar volume of the United States.

An interesting fact is disclosed in this same publication: a higher percentage of manufacturers' agents are located in the geographical division designated as the East North Central (the states of Michigan, Ohio, Indiana, Illinois and Wisconsin) than in any part of the country. About 34.7% of the total agency sales in the United States are made by the agents in this division who comprise 29.9% of the

*Mr. McCormick is Secretary of the Society of Manufacturers' Agents, Inc.

total. Michigan ranks third in the country in the percentage of total sales through manufacturers' agents. Thus the manufacturers' agent is an important figure in the markets of the midwest.

Kinds and Types—There are several varieties of agencies. The principal divisions are two, namely the so-called "one-man" agency and the "multi-man" agency. In the "one-man" agency an individual agent is supplemented by an office staff and sometimes by one or more salesmen. This agent usually covers a small, well defined territory on a routine schedule, representing reliable manufacturers who have worked out an exclusive agency agreement with him. In many cases this agent is the sales outlet for the entire production of a company.

The "multi-man" agency is usually made up of two or more partners, associates or sub-agents in addition to a suitable office staff and perhaps some sales trainees. In this case the territory covered can be larger and often on a more frequent schedule than was possible with the "one-man" agency. Quite often the partners, associates or sub-agents have special technical knowledge or skills that enable the agency to represent companies that have products of such a nature that special training is required to sell and service the product. The sub-agents sometimes live and work in cities or territories that are out-state or are located at a considerable distance from the agent's headquarters.

Variations of these general forms are usually worked out to suit local conditions or to cover the territory more effectively.

Advantages and Disadvantages As a Sales Outlet

Among the many advantages of using manufacturers' agents to sell a company's products are the following:

1. The manufacturer can obtain agents having many years of experience in a given field and those who possess a comprehensive knowledge of the market for a particular line.

2. The manufacturer's product gets aggressive selling, as the agent, working on commission, is entirely dependent upon the productivity of his own efforts.

3. The manufacturer gets immediate entry into the market by selling, in most cases, through an agency that has built up a clientele. The agent with established customers and a good following can introduce new products or the products of a small or little-known manufacturer, much more quickly than is possible with the manufacturer's own sales force. Frequently national market coverage can be obtained in a matter of weeks by means of the agency type of marketing.

4. It is economical to merchandise certain products through a manufacturer's agent because the manufacturer's direct sales expense is pre-determined and for the most part consists only of the agent's commission. This is especially beneficial to a manufacturer who has a limited line or who sells in a market with a limited potential. It reduces his sales risk to a minimum.

5. There is little or no cost to the manufacturer until sales are made, as the agent bears the cost of promoting, soliciting and selling. In many cases this saves the manufacturer the expense of recruiting, training and supervising

a field sales force. This is very helpful to a manufacturer who is just getting under way or for other reasons is operating on limited capital.

6. The manufacturers' agent usually cultivates the territory more thoroughly than would a salesman for the same manufacturer calling in the same area. The agent, because of his other lines, calls on all prospects in a given area to make certain he is not passing up any, and also to reduce his travelling expenses. What frequently is a small account for one of his lines can be a volume account for another company he represents.

There are some disadvantages to the agency type of distribution. A few of these disadvantages are outlined below:—

1. Since only the agent has direct contact with the purchasing personnel, it is sometimes more difficult for the manufacturer to study buying habits, customer needs or preferences and market conditions.

2. The manufacturer cannot control the agent's working schedule or routing, as he could with his own salesman.

3. There is some difficulty in intensifying sales efforts in especially promising territories because the agent may be pre-occupied with important calls for one of his other lines at that particular time. The selling time of the agent has to be shared with other manufacturers he represents.

4. Manufacturers with a wide line of established products in an advanced stage of sales development may find that their selling costs through agents are higher than through salesmen in their employ.

5. In the event that the manufacturer and the agent agree to dissolve their relationship, the agent can take a substantial part of the manufacturer's business with him because of the personal loyalty and good will he has created among his customers.

"A Meeting of Minds"—In order that a business-like working agreement can be arrived at, there should be a "meeting of minds" with a clear-cut understanding as to how the agent and the manufacturer are to function. After suitable discussion, the working agreement can be formalized by a contract, a written agreement or an exchange of letters in which the principal issues are set forth, to make certain that both parties have a clear understanding of the agreement. Sometimes legal counsel should be consulted to avoid common pit-falls.

There are outlined below some of the essential elements of a manufacturer's agency agreement. There should be a distinct understanding between the agent and the manufacturer on the following points:

1. The agent is an independent operator and not an employee of the manufacturer. Realization of this fact is important in order to avoid penalties under Federal Income Tax, Social Security, Workmen's Compensation and other statutes that provide for the health and welfare of the employee.

2. Territory boundaries should be well defined using state and county outline maps where possible.

3. The agent should have exclusive selling rights within his territory. House accounts are not allowed. Selling national accounts in an agent's territory should be agreed upon. Likewise, there should be an understanding as to which agent gets the commission when a sale is made in one territory

but the goods are delivered to another agent's territory.

4. The agent is free to sell non-competing lines.

5. The amount of sales and advertising assistance to be furnished by the manufacturer should be defined.

6. The payment of government, state or city sales, use or excise taxes, if applicable, should be discussed and agreed upon.

7. There should be an agreement on which party pays the expenses incurred when returning parts or products under warranty.

8. Sales quotas, if any, should be clearly determined and the agent should know how they are determined.

9. There should be a clear understanding as to the duration of the agreement.

10. There should be an arrangement whereby the agency (with the equity the agent has built up over a period of time) can be sold or transferred by mutual agreement to a third party. This is sometimes necessary because of the agent's physical condition or for other plausible reasons.

11. The commissions to be paid—the percentage and the date of payment—should be understood.

12. Special arrangements should be made to provide for arbitration on such things as credit losses, special discounts, maintenance of stock, etc. whenever such emergencies arise.

There are other items that will enter the picture from time to time that cannot be foreseen when the original understanding is discussed. The principals should be able to discuss these issues objectively and arrive at a solution that is fair and equitable to the agent and the manufacturer. In this way both sides will profit from the arrangement and harmony will prevail.

One of the principal objectives of the Society of Manufacturers' Agents is to raise the standards of agency operation all along the line. The manufacturer's agent is here to stay because he performs a very essential function in the marketing of our country's products. He is a thorough-going professional man, a genuine benefactor of small industry.

Alfred Marshall: Systemizer of Economics

*By ANTHONY Y. C. KOO**

Our series of brief accounts continues with one of the most influential English economists.

Despite all the changes in economic conditions and economic policies since Marshall wrote his monumental work *Principles of Economics* in 1890, his theory of value still holds a place of its own. It contains concepts which no economist can afford to be ignorant of, however "modern" he claims to be. It is difficult to do full justice to his contributions in a short summary, because the most valuable aspects of Marshall's work are the wealth of detail and the way in which he succeeded in combining the theoretical and concrete.

He undertook the study of economics not in his youth but after he had had theology and mathematics. Because of this, Marshall came to economics with a rare combination of talents and training. He was a mathematician, historian and philosopher. The factor that turned him to economics was the poverty of the masses in his days, and he was moved to know the cause of it all. He believed that "the destruction of the poor is their poverty and the study of the causes of poverty is the study of the causes of the degradation of a larger part of mankind."[2] So he viewed economics as "on one side a study of wealth; and on the other, and more important side, a part of the study of man."[3]

He was made professor of political economy at Cambridge in 1885. During his twenty-three years of teaching, he participated actively in the establishment of the Royal Economic Society, of which he was president, and the subsequent founding of the *Economic Journal*. It was through his students even more than through his writings that Marshall made economics an independent branch of study as it exists today. He is known as the founder of the Cambridge School. His students include such outstanding economists as A. C. Pigou and Lord Keynes, whose analytic approaches rely heavily on those of Marshall.

The core and heart of his theory of value is in Book V of the *Principles* where one would find the famous treatment of the equilibrium of supply and demand through period analysis. His theory shows that price is determined by supply and demand, which interact on each other. It is as useless to ask which of the two determine price as it is to ask which blade of a pair of scissors does the cutting. A distinguishing feature of Marshall's analysis is his emphasis of the time element in economics. "For the nature of the (market) equilibrium itself, and that of the causes by which it is determined, depend on the length of the period over which the market is taken to extend. . . . If the period is short, the

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[1]For a more comprehensive treatment of the outstanding events of Marshall's life, together with an overall analysis of his character, see J. M. Keynes "Memorial: Alfred Marshall, 1842 - 1924;" *Economic Journal* Sept. 1924, vol. XXVI, pp. 311-372.

[2]*Principles*, 8th edition, p. 3.

[3]*Principles*, p. 1.

supply is limited to the stores which happen to be at hand: if the period is longer, the supply will be influenced, more or less, by the cost of producing the commodity in question; and if the period is very long, this cost will in its turn be influenced, more or less, by the cost of producing the labour and the material things required for producing the commodity."[4]

The keynote of the *Principles* is that it relates always to a dynamic world of change and movement and that all his tools are chosen with a view to throwing light on the working of economic forces in such a world. This explains his preference for the method of partial equilibrium which uses such typical concepts as the representative firm, and his distrust of conclusions that could only be reached on the assumptions of a stationary state. In his *Principles* he relegated all his diagrams to the footnotes and mathematical notes in the appendix, because he wanted his book to be read by business men.

Among his other great works are *Money, Credit and Commerce* and *Industry and Trade*. But his *Principles* remains not only a masterpiece in economics but also one of the best-sustained sellers in the history of publishing.

[4] *Principles*, p. 330.

FORMER RESIDENT RETURNS

(Social Notes from All Over)

It's always news when a former resident decides to settle down with us again, but when the character has been absent sixty million years, that's *really* news. If you are a rock-hunter, and lucky, you may have collected out of some Mesozoic shale bed in the Middle West a perfect print of an attractive fan-shaped leaf without a central rib: this is *Ginkgo Biloba,* which vanished completely from this hemisphere, and was reintroduced from China as an ornamental. This most primitive of deciduous trees is one of the most attractive trees imaginable, both for the shape of its leaf and for its habit of growth, for the twiglets emerge immediately out of the trunk and main branches, clothing the tree in such delicate foliage as to give it the popular name of Maidenhair Tree. Why is this news for a businessman's magazine? Simply because the Ginkgo, though a living fossil, is one of the trees best adapted to city planting, for parks or streets, being highly resistant to carbon monoxide and other noxious city gases. Any businessman affiliated with civic betterment committees should make the acquaintance of this old Michigan resident and invite it into his community.

ANSWERS TO "DO YOU KNOW THESE MICHIGAN TOWNS?"

(From page 23)

1. Adrian; 2. Muskegon; 3. East Lansing; 4. Alma.

THE WRONG PEOPLE ARE ON RFD

Here is Mr. James Gadget, a well-to-do lawyer in the legal department of a big auto parts company in Grommet City, Michigan. Mr. Gadget lives in the country five miles from his work, and his mailing address is *RFD 1, Ruralville*. He raises lilies in his spare time, and rents his three-acre pasture to a neighbor. His wife usually shops in Grommet City and occasionally goes to Detroit. On a typical day Mrs. Gadget opens the over-sized mailbox and finds the following:

bill for the month's purchases from a Detroit department store
letter from her sister-in-law Mamie
announcement of a dress sale from a shop in Grommet City
advance notice of the concert series at Greengrass University, East Grommet City

all of which interest her, and the following items, which drop into the waste-basket at the rate of 32 feet per second:

direct mail offer for a chick brooder from a Ruralville tractor dealer, announcing opening of a new store, with an offer of free chinaware
pre-Christmas special on sheep manure in 25-lb lots
advertisement from the *Rural Housewife* for a 3-year subscription
postcard from a glue factory in Rural Center offering to pick up dead cows free of charge

And here is Mr. Thomas Gudgeon, a semi-retired farmer, who lives at 29999 West Hawthorne Lane, *Grommet City*, in an area recently taken into the city limits. He has a large vegetable garden out back, and four days a week goes to help his sons at one of the three family farms. His interests are entirely agricultural, and he prefers to shop in Ruralville, where he knows the people, rather than downtown, which is only six miles closer to him. On this same morning, the mailbox on the front porch contains:

announcement of a dress sale in Grommet City (see above)
announcement of university concert series (see above)
special subscription offer to the Culture-by-the-Minute Book Club

Mr. Gudgeon happens to be in the market for a chick brooder, and his wife would just love to renew the subscription she used to have to the *Rural Housewife* if someone would remind her.

These imaginary characters dramatize the fact that 40% of the mail addressed to Rural Boxholder is wasted. Add to this waste the opportunities lost by farm advertisers who fail to reach Mr. Gudgeon, and the ill-will engendered in people who find their rural mailboxes stuffed with what is "trash" to them: the misdirected money and energy make an impressive total.

According to Post Office Department figures, RFD routes serve over 9,000,000 families, though there are less than 5,500,000 rural families. On the other hand, the outer suburban ring around many cities includes a large proportion of farmers. The conclusion to be drawn from this, by the canny direct-mail advertiser, is that you can't tell a customer by his address.

Printer's Ink for August 6, 1954, prints a valuable article which treats this topic in greater detail.)

A NEW SERVICE INAUGURATED BY CONTINUING EDUCATION

MSC's Continuing Education Service will intensify its work on the local level this month by opening three regional offices in the state. The project is an experiment in taking the services and resources of the college directly into the communities. The first regional offices will be opened in the Detroit area, Southwestern and Northwestern Michigan, and will operate in full cooperation with local educational institutions and agencies. This service has been approved by the State Board of Agriculture. Later there may be other such offices if the response to these is encouraging.

The regional offices will provide an instrument by which Michigan State may strengthen and supplement continuing education activities of institutions and agencies at the community level. Their directors will be a new contact for citizens seeking the services of this institution, in addition to those available through the Cooperative Extension Service.

The Continuing Education Service was established at Michigan State in 1948 to make the educational resources of the college available to the citizens of the state, both on campus and off. The new regional offices, their directors and temporary phone numbers are the following:

Lowell Eklund in the Detroit area serving Wayne, Oakland, Macomb, and adjacent counties; Phone FEderal 5-5663 (Pontiac)

L. Andrew Doyle at Traverse City in conjunction with Northwestern Michigan College serving Grand Traverse, Wexford, Manistee, Mason, and adjacent counties Phone 2555R (Traverse City)

Wesley I. Schmidt, Kalamazoo serving Kalamazoo, St. Joseph, Cass, Branch, Van Buren, Berrien, Barry, Allegan, Kent, Ottawa and Muskegon counties. Phone 3-3549 (Kalamazoo)

EXECUTIVE MANAGEMENT PROGRAM

Applications are still being received for this four-week program for business executives. Its dates are January 23 to February 5 and February 21 to March 5. The program's objectives are (1) to enable administrators to execute more effectively their present responsibilities, (2) to expand their abilities for greater future responsibilities and (3) to encourage personal development. For information, write to Ward J. McDowell, Director, Business Administration Building, Michigan State College.

MICHIGAN STATE COLLEGE
EAST LANSING

SCHOOL OF BUSINESS AND
PUBLIC SERVICE
OFFICE OF THE DEAN

November 10, 1954

Greetings:

As a reader of Business Topics you undoubtedly are interested in the problems of education in business administration at MSC.

Our enrollment is expected to double in the next ten years due to the great increase in grade and high schools and the growing percentage that take courses in business administration. At present we have 2,762 students majoring in business fields. Meanwhile our other services for business in continuing education, conferences, and research will continue to expand.

The great problem is to enlarge our capacity in time to handle these demands. Qualified faculty members are scarce, and everyone may help by urging more top-level young people to enter university teaching careers. Comparable increases in operating funds will be imperative.

At Michigan State business administration education has a special need for a large, modern building to meet the needs of this type of program. Housing of this largest school on the campus is scattered in small Victorian buildings and bursting at the seams. Again this year the Legislature is requested to grant funds for this building. The support of this measure by the business community of the State may ensure its passage.

Cordially yours,

H. J. Wyngarden

H. J. Wyngarden, Dean

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BUSINESS RESEARCH PUBLICATIONS

The Bureau of Business Research was established in 1951 to assist the Michigan State College faculty in conducting economic and business research, and to serve Michigan business with information and studies. Inquiries should be addressed to the Bureau's director. The studies are usually published, and those currently available are listed below.

RESEARCH REPORTS

(single copies free)

3. *Greater Muskegon Consumer Shopping Survey*
7. *Michigan Tourist Survey*
8. *Monroe Industrial Survey*
9. *Careers in Hotel and Restaurant Management*
10. *What Michigan Newspapers Tell About the Schools*
11. *Winter Resorts in Michigan*

CONFERENCE REPORTS

1. *"Knowing and Interpreting Your Community" Conference ($1.00)*
3. *1953 Michigan Aeronautics Conference ($1.00)*
4. *1953 Michigan Advertising Management Conference ($1.00)*
5. *Profit Potentials Through Customer Satisfaction in 1954 (Restaurant Management Conference) ($5.00)*